Claims

WHAT IS CLAIMED IS:

1. A method for handoff from a first node in a wireless network, the method comprising:

reserving a first radio resource for the first node in the wireless network;

detecting a target node, wherein the first node is coupled to the target node;

reserving a second radio resource for the target node, wherein an amount of the second radio resource is equal to that of the first radio resource; and

performing the handoff.

2. The method of claim 1 further comprising determining the first radio resource by a controlling system in the wireless network, wherein the controlling system is coupled to the first node and the target node.

3. The method of claim 1 wherein the second radio resource may be used for low priority traffic prior to perform the handoff.

4. The method of claim 1 further comprising negotiating a change in service for the handoff if the target node is not able to perform the handoff.

5. The method of claim 4 wherein the negotiation is dependent on a class of service.

6. A method for performing handoff from an originating Radio Network Subsystem (RNS) in a wireless network, the method comprising:

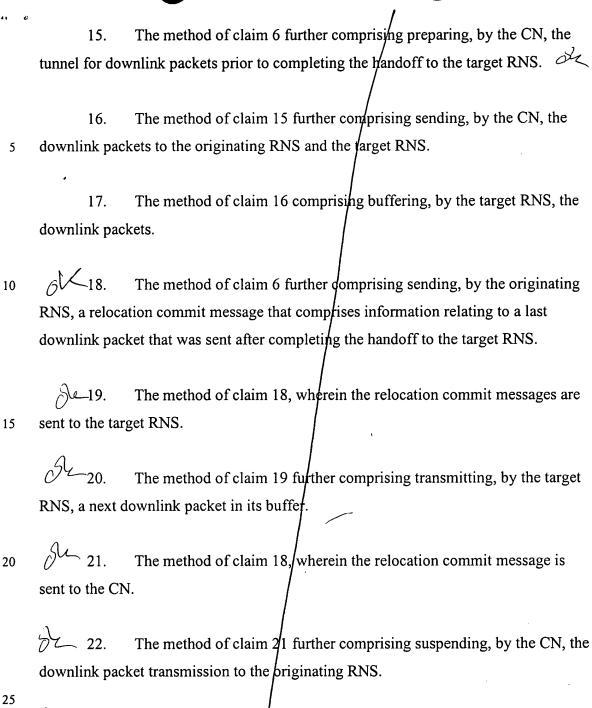determining a target RNS, wherein the target RNS is coupled to the originating RNS;

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sending a relocation started message from the originating RNS to a Core Network (CN), wherein the CN is coupled to the originating RNS and the target RNS;

receiving, at the CN, the relocation started message;

reserving, by the target RNS, radio resources;

sending, from the target RNS, an acknowledge message; and

completing the handoff to the target RNS.

7.   The method of claim 6 further comprising, prior to the relocation started message being sent, sending a relocation request message to the target RNS.

8.   The method of claim 7, wherein the relocation request message comprises information pertaining to a radio resource bearer identifier.

9.   The method of claim 7, wherein the relocation request message comprises information pertaining to resource reservation.

10.   The method of claim 7, wherein the relocation request message comprises information pertaining to an Internet Protocol (IP) address.

11.   The method of claim 7, wherein the relocation request message comprises information pertaining to an uplink tunnel state.

12.   The method of claim 6 wherein the acknowledge message is sent to the originating RNS and the CN.
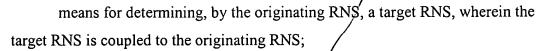
13.   The method of claim 6 wherein the acknowledge message contains an IP address of a packet processing function in the target RNS.

14.   The method of claim 6 wherein the acknowledge message prepares a tunnel to the CN for uplink packets.

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15.   The method of claim 6 further comprising preparing, by the CN, the tunnel for downlink packets prior to completing the handoff to the target RNS.

16.   The method of claim 15 further comprising sending, by the CN, the downlink packets to the originating RNS and the target RNS.

17.   The method of claim 16 comprising buffering, by the target RNS, the downlink packets.

18.   The method of claim 6 further comprising sending, by the originating RNS, a relocation commit message that comprises information relating to a last downlink packet that was sent after completing the handoff to the target RNS.

19.   The method of claim 18, wherein the relocation commit messages are sent to the target RNS.

20.   The method of claim 19 further comprising transmitting, by the target RNS, a next downlink packet in its buffer.

21.   The method of claim 18, wherein the relocation commit message is sent to the CN.

22.   The method of claim 21 further comprising suspending, by the CN, the downlink packet transmission to the originating RNS.

23.   The method of claim 22 comprising sending, by the CN, the downlink packets to the target RNS.

24.   A system for performing handoff from an originating Radio Network Subsystem (RNS) in a wireless network, the system comprises:

means for determining, by the originating RNS, a target RNS, wherein the target RNS is coupled to the originating RNS;

means for sending, by the originating RNS, a relocation started message to a Core Network (CN), wherein the CN is coupled to the originating RNS and the target RNS;

means for receiving, at the CN, the relocation started message;

means for reserving, by the target RNS, radio resources;

means for sending, from the target RNS, an acknowledge message; and

means for completing the handoff to the target RNS.

25.   The system of claim 24 further comprises means for sending a relocation request message to the target RNS prior to the relocation started message being sent.

26.   The system of claim 24 further comprises means for receiving, by the originating RNS and the CN, the acknowledge message.

27.   The system of claim 24 further comprises means for preparing, by the acknowledge message, a tunnel to the CN for uplink packets.

28.   The system of claim 24 further comprises means for preparing, by the CN, the tunnel for downlink packets prior to completing the handoff to the target RNS.

29.   The system of claim 28 further comprises means for sending, by the CN, the downlink packets to the originating RNS and the target RNS.

30.   The system of claim 29 further comprises means for buffering, by the target RNS, the downlink packets.

31.   A computer program comprising instructions for:

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reserving a first radio resource for a first node in a wireless network;

detecting a target node that is coupled to the first node;

reserving a second radio resource for the target node, an amount of the second radio resource being equal to that of the first radio resource; and

5   performing the handoff.

32.   The computer program of claim 31 further comprising instructions for determining the first radio resource by a controlling system in the wireless network, wherein the controlling system is coupled to the first node and the target node.

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33.   A computer program comprising instructions for:

determining, by an originating radio network subsystem (RNS), a target RNS, wherein the target RNS is coupled to the originating RNS;

sending, by the originating RNS, a relocation started message to a Core

15   Network (CN), wherein the CN is coupled to the originating RNS and the target RNS;

receiving, at the CN, the relocation started message;

reserving, by the target RNS, radio resources;

sending, from the target RNS, an acknowledge message; and

completing the handoff to the target RNS.

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34.   The computer program of claim 33 further comprising instructions for, prior to the relocation started message being sent, sending a relocation request message to the target RNS.

25   35.   The computer program of claim 33 further comprising instructions for receiving, by the originating RNS and the CN, the acknowledge message.

36.   The computer program of claim 33 further comprising instructions for preparing, by the acknowledge message, a tunnel to the CN for uplink packets.

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37.   The computer program of claim 33 further comprising instructions for, prior to completing the handoff to the target RNS, preparing, by the CN, the tunnel for downlink packets.

38.   The computer program of claim 37 further comprising instructions for sending, by the CN, the downlink packets to the originating RNS and the target RNS.

39.   The computer program of claim 38 further comprising instructions for buffering, by the target RNS, the downlink packets.

40.   The computer program of claim 33 further comprising instructions for, after completing the handoff to the target RNS, sending, by the originating RNS, a relocation commit message that comprises information relating to a last downlink packet that was sent.

41.   The computer program of claim 40 further comprising instructions for sending the relocation commit messages to the target RNS.

42.   The computer program of claim 41 further comprising instructions for transmitting, by the target RNS, a next downlink packet in its buffer.

43.   The computer program of claim 40, further comprising instructions for sending the relocation commit message to the CN.

44.   The computer program of claim 43 further comprising instructions for suspending, by the CN, the downlink packet transmission to the originating RNS.

45.   The computer program of claim 44 further comprising instructions for sending, by the CN, the downlink packets to the target RNS.